

Ali Mohammad Saghiri, Ph.D.

Assistant Professor, Department of Computer Science, William Paterson University
Homepage: amsaghiri.github.io

Research Interests

Blockchain, Web 3.0, Artificial Intelligence, Distributed Systems, and Software Engineering.

Professional Experience

Assistant Professor

Department of Computer Science, William Paterson University [Tenure Track]

New Jersey, USA
2023–Now

- Taught computer science courses.

Postdoctoral Researcher

School of Business, Stevens Institute of Technology

New Jersey, USA
2023–2023

- Research on challenges of AI with focus on cybersecurity issues.
- Research on peer-to-peer energy trading markets.
- Research on topology optimization using reinforcement learning.

Postdoctoral Researcher

School of Systems, Stevens Institute of Technology

New Jersey, USA
2022–2022

- Designed adaptive cruise control algorithms.
- Researched budget management systems based on blockchain and central bank digital currencies.
- Designed and implemented a parking-sharing application.
- Teaching assistant and content provider for blockchain class.

Consultant

Rutgers School of Dental Medicine

Newark, USA
2022–Now

- Research on applications of digital twins and artificial intelligence in dentistry.

Visiting Professor

Department of Computer Engineering, Azad University, Tehran (North Branch)

Tehran, Iran
2017–2018

- Taught courses on artificial intelligence, database, software engineering, and theory of automata.
- Supervised student theses.

Visiting Professor

Department of Computer Engineering, Azad University, Tehran (Shahre-Rey Branch)

Tehran, Iran
2014–2017

- Taught courses on software engineering and software engineering laboratory.
- Supervised student theses.

Education

Ph.D. in Computer Engineering, Artificial Intelligence

Amirkabir University of Technology

Tehran, Iran
Sep. 2010–2017

Advisor: Dr. Mohammad Reza Meybodi. Project: “Cellular Learning Automata and Their Applications to Peer-to-Peer Networks.”

M.Sc. in Computer Engineering, Software Engineering

Amirkabir University of Technology

Tehran, Iran
Sep. 2007–2010

Cumulative GPA: 3.72 (17.5/20). Advisor: Dr. Alireza Bagheri. Project: “Personalized Information Retrieval in Peer-to-Peer Systems Considering User Profile and Source Similarity.”

Publications

Books

- [1] **A. M. Saghiri**, M. D. Khomami, and M. R. Meybodi, *Intelligent Random Walk: An Approach Based on Learning Automata*. Springer, 2019.

- [2] A. Rezvanian, **A. M. Saghiri**, S. M. Vahidipour, M. Esnaashari, and M. R. Meybodi, *Recent Advances in Learning Automata*. Springer, 2018.

Books – Self-Published

- [3] **A. M. Saghiri**, *AI Millionaire: A Guide to Forecasting Future Jobs and Hunting Opportunities*. Amazon, 2024.
- [4] **A. M. Saghiri**, *Why GPT-Based Chatbots Will Be Vital: Applications, Challenges, and the Shaping of the Fragile Job Market*. Amazon, 2023.

Book Chapters

- [5] **A. M. Saghiri**, K. G. HamAbadi, and M. Vahdati, “Applications of Digital Twins to Migraine,” in *Digital Twin for Healthcare*. Elsevier, 2023.
- [6] **A. M. Saghiri**, “Cognitive Internet of Things: Challenges and Solutions,” in *Artificial Intelligence-Based Internet of Things Systems*. Springer, 2022, pp. 335–362.
- [7] M. Vahdati, K. G. HamAbadi, and **A. M. Saghiri**, “IoT-Based Healthcare Monitoring Using Blockchain,” in *Applications of Blockchain in Healthcare*. Springer, 2021, pp. 141–170.
- [8] **A. M. Saghiri**, “Blockchain Architecture,” in *Advanced Applications of Blockchain Technology*. Springer, 2020, pp. 161–176.
- [9] O. R. B. Speily, A. Rezvanian, A. Ghasemzadeh, **A. M. Saghiri**, and S. M. Vahidipour, “Lurkers Versus Posters: Investigation of the Participation Behaviors in Online Learning Communities,” in *Educational Networking*. Springer, 2020, pp. 269–298.
- [10] **A. M. Saghiri**, K. G. HamAbadi, and M. Vahdati, “The Internet of Things, Artificial Intelligence, and Blockchain: Implementation Perspectives,” in *Advanced Applications of Blockchain Technology*. Springer, 2020, pp. 15–54.
- [11] S. Gholami, M. R. Meybodi, and **A. M. Saghiri**, “A Learning Automata-Based Version of SG-1 Protocol for Super-Peer Selection in Peer-to-Peer Networks,” in *Recent Advances in Information and Communication Technology*. Springer, 2014, pp. 189–201.

Journal Articles

- [12] **NEW** **A. M. Saghiri**, “Adaptive Quine Structures for Metacognitive Evolution in Large Language Models: A Functional Framework with Gödelian Bounds and Illustrative Applications,” *Mathematics*, vol. 14, no. 13, article 2371, 2026. DOI: 10.3390/math14132371.
- [13] **NEW** M. A. Saghiri, **A. M. Saghiri**, E. Samadi, J. Vakhnovetsky, A. Kowalczyk, M. Farhadi, O. Shahid, A. Memariani, and S. M. Morgano, “Advancing 3D Dental Scanning: The Use of Photogrammetry with Light Detection and Ranging for Edentulous Arches,” *Journal of Prosthetic Dentistry*, vol. 134, no. 6, pp. 2492–2499, 2025. DOI: 10.1016/j.prosdent.2024.10.032.
- [14] **NEW** Y.-S. Song, S. Wang, S. Park, B. Hanna, K. J. Johnson, S. R. Darjatmoko, M. A. Saghiri, **A. M. Saghiri**, B. Liu, C. M. Sorenson, and N. Sheibani, “Receptor-Interacting Protein Kinase-3 Expression Impacts Ocular Vascular Development and Pathological Neovascularization,” *Cells*, vol. 13, no. 24, article 2109, 2024. DOI: 10.3390/cells13242109.
- [15] A. Ahmadikia, A. Shirzad, and **A. M. Saghiri**, “A Bibliometric Analysis of Quantum Machine Learning Research,” *Science & Technology Libraries*, 2024.
- [16] A. R. Rezvanian, M. Vahidipour, and **A. M. Saghiri**, “CaAIS: Cellular Automata-Based Artificial Immune System for Dynamic Environments,” *Algorithms*, vol. 17, no. 1, 2024.
- [17] S. Vasebi, Y. M. Hayari, and **A. M. Saghiri**, “A Literature Review of Energy Optimal Adaptive Cruise Control Algorithms,” *IEEE Access*, 2023.
- [18] **A. M. Saghiri**, M. R. Jabbarpour, M. Vahidipour, M. Sookhak, and A. Forestiero, “A Survey of Artificial Intelligence Challenges: Analyzing the Definitions, Relationships, and Evolutions,” *Applied Sciences*, vol. 12, pp. 40–54, 2022.

- [19] S. Gholami, **A. M. Saghiri**, S. M. Vahidipour, and M. R. Meybodi, “HLA: A Novel Hybrid Model Based on Fixed Structure and Variable Structure Learning Automata,” *Journal of Experimental & Theoretical Artificial Intelligence*, 2022.
- [20] M. R. Jabbarpour, **A. M. Saghiri**, and M. Sookhak, “A Framework for Component Selection Considering Dark Sides of Artificial Intelligence: A Case Study on Autonomous Vehicle,” *Electronics*, vol. 10, article 384, 2021.
- [21] N. Amirazodi, **A. M. Saghiri**, and M. R. Meybodi, “A Self-Adaptive Algorithm for Super-Peer Selection Considering the Mobility of Peers in Cognitive Mobile Peer-to-Peer Networks,” *International Journal of Communication Systems*, vol. 34, e4661, 2021.
- [22] E. Rezaee, **A. M. Saghiri**, and A. Forestiero, “A Survey on Blockchain-Based Search Engines,” *Applied Sciences*, vol. 11, article 7063, 2021.
- [23] R. Mahmoudi, S. Roozi, **A. M. Saghiri**, and A. Mahmoudi, “Extracting Strategies for Improving Internet-of-Things-Based Home Industries in Iran: A Strengths, Weaknesses, Opportunities, and Threats Analysis,” *IEEE Transactions on Engineering Management*, vol. 68, pp. 586–598, 2020.
- [24] **A. M. Saghiri** and M. R. Meybodi, “Open Asynchronous Dynamic Cellular Learning Automata and Its Application to Allocation Hub Location Problem,” *Knowledge-Based Systems*, vol. 139, pp. 149–169, 2018.
- [25] **A. M. Saghiri** and M. R. Meybodi, “An Adaptive Super-Peer Selection Algorithm Considering Peers’ Capacity Utilizing Asynchronous Dynamic Cellular Learning Automata,” *Applied Intelligence*, vol. 48, pp. 271–299, 2018.
- [26] **A. M. Saghiri** and M. R. Meybodi, “On Expediency of Closed Asynchronous Dynamic Cellular Learning Automata,” *Journal of Computational Science*, vol. 24, pp. 371–378, 2018.
- [27] N. Amirazodi, **A. M. Saghiri**, and M. R. Meybodi, “An Adaptive Algorithm for Super-Peer Selection Considering Peer’s Capacity in Mobile Peer-to-Peer Networks Based on Learning Automata,” *Peer-to-Peer Networking and Applications*, vol. 11, pp. 74–89, 2018.
- [28] **A. M. Saghiri** and M. R. Meybodi, “A Distributed Adaptive Landmark Clustering Algorithm Based on MOverlay and Learning Automata for Topology Mismatch Problem in Unstructured Peer-to-Peer Networks,” *International Journal of Communication Systems*, vol. 30, e2977, 2017.
- [29] S. F. Deiman, **A. M. Saghiri**, and M. R. Meybodi, “A Delay-Aware Super-Peer Selection Algorithm for Gradient Topology Utilizing Learning Automata,” *Wireless Personal Communications*, vol. 95, pp. 2611–2624, 2017.
- [30] **A. M. Saghiri** and M. R. Meybodi, “A Closed Asynchronous Dynamic Model of Cellular Learning Automata and Its Application to Peer-to-Peer Networks,” *Genetic Programming and Evolvable Machines*, vol. 18, pp. 313–349, 2017.
- [31] **A. M. Saghiri** and M. R. Meybodi, “An Approach for Designing Cognitive Engines in Cognitive Peer-to-Peer Networks,” *Journal of Network and Computer Applications*, vol. 70, pp. 17–40, 2016.
- [32] **A. M. Saghiri** and M. R. Meybodi, “A Self-Adaptive Algorithm for Topology Matching in Unstructured Peer-to-Peer Networks,” *Journal of Network and Systems Management*, vol. 24, pp. 393–426, 2016.

Conference Proceedings

- [33] **NEW** J. W. Horsky and **A. M. Saghiri**, “Low-Code and No-Code Platforms for Linux System Administration: A SWOT Analysis,” in *Proceedings of the 2026 International Conference on Artificial Intelligence, Computer, Data Sciences and Applications (ACDSA)*, 2026. DOI: 10.1109/ACDSA67686.2026.11467789.
- [34] **NEW** **A. M. Saghiri**, “Adaptive Shell Scripting with Quine Programs and Large Language Models,” in *Proceedings of the 2026 International Conference on Current Research in Artificial Intelligence and Data Science (ICCRAIDS)*, 2026. DOI: 10.1109/ICCRAIDS67816.2026.11519702.
- [35] **NEW** **A. M. Saghiri**, “The Quine-Agent Pattern: A Genome-Governed Architecture for Auditable Self-Modifying Software Agents,” Ccidsa conference proceeding, Canada, 2026 (Presented).
- [36] **A. M. Saghiri** and M. A. Saghiri, “A Study on the Dark Sides of AI on the Future of Education: A Novel Classification of Challenges Impacting Use Cases,” 11th Annual NJBDA Symposium, Rutgers, USA, May 17, 2024.

- [37] **A. M. Saghiri** and N. Wang, “Self-Evolving Programs: A Novel Approach Leveraging LLMs and Quine Programs,” in *2024 International Conference on Computing, Internet of Things and Microwave Systems (ICCIMS)*, IEEE, 2024, pp. 1–4. DOI: 10.1109/ICCIMS61672.2024.10690672.
- [38] **A. M. Saghiri** and N. Wang, “Decentralized Platoon Management Based on Blockchain: A SWOT Analysis Research Perspective,” in *2024 International Conference on Computing, Internet of Things and Microwave Systems (ICCIMS)*, IEEE, 2024, pp. 1–5. DOI: 10.1109/ICCIMS61672.2024.10690453.
- [39] A.-N. Jahromi, **A. M. Saghiri**, and M. R. Meybodi, “Q-Defense: When Q-Learning Comes to Help Proof-of-Work Against the Selfish Mining Attack,” *International Conference on Agents and Artificial Intelligence (ICAART 2024)*, 2024.
- [40] **A. M. Saghiri** and S. Moazeni, “A Generic Parametric Framework for Peer-to-Peer Electricity Market Design,” in *2023 IEEE International Conference on Environment and Electrical Engineering and 2023 IEEE Industrial and Commercial Power Systems Europe (EEEIC / I&CPS Europe)*, 2023.
- [41] K. GholizadehHamlabadi, M. Vahdati, **A. M. Saghiri**, and A. Forestiero, “Digital Twins in Cancer: State-of-the-Art and Open Research,” in *AIIoT4DH Workshop at the 2021 IEEE/ACM Conference on Connected Health: Applications, Systems, and Engineering Technologies (CHASE)*, IEEE/ACM, 2022.
- [42] M. M. D. Khomami, A. Rezvanian, **A. M. Saghiri**, and M. R. Meybodi, “Solving Minimum Dominating Set in Multiplex Networks Using Learning Automata,” in *2021 26th International Computer Conference, Computer Society of Iran (CSICC)*, IEEE, 2021, pp. 1–6.
- [43] M. M. D. Khomami, A. Rezvanian, **A. M. Saghiri**, and M. R. Meybodi, “SIG-CLA: A Significant Community Detection Based on Cellular Learning Automata,” in *2020 8th Iranian Joint Congress on Fuzzy and Intelligent Systems (CFIS)*, IEEE, 2020, pp. 039–044.
- [44] M. M. D. Khomami, A. Rezvanian, **A. M. Saghiri**, and M. R. Meybodi, “Utilizing Cellular Learning Automata for Finding Communities in Weighted Networks,” in *2020 6th International Conference on Web Research (ICWR)*, IEEE, 2020, pp. 325–329.
- [45] M. M. D. Khomami, A. Rezvanian, **A. M. Saghiri**, and M. R. Meybodi, “Overlapping Community Detection in Social Networks Using Cellular Learning Automata,” in *2020 28th Iranian Conference on Electrical Engineering (ICEE)*, IEEE, 2020, pp. 1–6.
- [46] **A. M. Saghiri**, “A Survey on Challenges in Designing Cognitive Engines,” in *2020 6th International Conference on Web Research (ICWR)*, IEEE, 2020, pp. 165–171.
- [47] M. M. D. Khomami, A. Rezvanian, **A. M. Saghiri**, and M. R. Meybodi, “Distributed Learning Automata-Based Algorithm for Finding k-Clique in Complex Social Networks,” in *2020 11th International Conference on Information and Knowledge Technology (IKT)*, IEEE, 2020, pp. 139–143.
- [48] M. Ghorbani, M. R. Meybodi, and **A. M. Saghiri**, “An Adaptive Topology Management Algorithm in P2P Networks Based on Learning Automata,” in *2019 7th Iranian Joint Congress on Fuzzy and Intelligent Systems (CFIS)*, IEEE, 2019, pp. 1–4.
- [49] M. Ghorbani, M. R. Meybodi, and **A. M. Saghiri**, “An Architecture for Managing Internet of Things Based on Cognitive Peer-to-Peer Networks,” in *2019 5th International Conference on Web Research (ICWR)*, IEEE, 2019, pp. 111–116.
- [50] **A. M. Saghiri**, M. Vahdati, K. Gholizadeh, M. R. Meybodi, M. Dehghan, and H. Rashidi, “A Framework for Cognitive Internet of Things Based on Blockchain,” in *2018 4th International Conference on Web Research (ICWR)*, IEEE, 2018, pp. 138–143.
- [51] M. Vahdati, K. G. HamlAbadi, **A. M. Saghiri**, and H. Rashidi, “A Self-Organized Framework for Insurance Based on Internet of Things and Blockchain,” in *2018 IEEE 6th International Conference on Future Internet of Things and Cloud (FiCloud)*, IEEE, 2018, pp. 169–175.
- [52] M. M. D. Khomami, M. A. Haeri, M. R. Meybodi, and **A. M. Saghiri**, “An Algorithm for Weighted Positive Influence Dominating Set Based on Learning Automata,” in *2017 IEEE 4th International Conference on Knowledge-Based Engineering and Innovation (KBEI)*, IEEE, 2017, pp. 734–740.
- [53] K. G. HamlAbadi, **A. M. Saghiri**, M. Vahdati, M. D. TakhtFooladi, and M. R. Meybodi, “A Framework for Cognitive Recommender Systems in the Internet of Things (IoT),” in *2017 IEEE 4th International Conference on Knowledge-Based Engineering and Innovation (KBEI)*, IEEE, 2017, pp. 971–976.

- [54] A. Ahmadi, M. R. Meybodi, and **A. M. Saghiri**, “Adaptive Search in Unstructured Peer-to-Peer Networks Based on Ant Colony and Learning Automata,” in *2016 Artificial Intelligence and Robotics (IranOpen)*, IEEE, 2016, pp. 133–139.
- [55] S. F. Deiman, **A. M. Saghiri**, and M. R. Meybodi, “An Adaptive Algorithm for Managing Gradient Topology in Peer-to-Peer Networks,” in *2016 Eighth International Conference on Information and Knowledge Technology (IKT)*, IEEE, 2016, pp. 91–97.
- [56] M. H. G. Dolabi, M. R. Meybodi, and **A. M. Saghiri**, “A Bandwidth-Aware Algorithm for Solving Topology Mismatch Problem in Peer-to-Peer Networks Utilizing the Combination of Learning Automata and X-BOT Algorithm,” in *2015 23rd Iranian Conference on Electrical Engineering*, IEEE, 2015, pp. 607–612.
- [57] M. Ghorbani, M. R. Meybodi, and **A. M. Saghiri**, “A New Version of K-Random Walks Algorithm in Peer-to-Peer Networks Utilizing Learning Automata,” in *The 5th Conference on Information and Knowledge Technology*, IEEE, 2013, pp. 1–6.
- [58] M. Ghorbani, M. R. Meybodi, and **A. M. Saghiri**, “A Novel Self-Adaptive Search Algorithm for Unstructured Peer-to-Peer Networks Utilizing Learning Automata,” in *2013 3rd Joint Conference of AI & Robotics and 5th RoboCup Iran Open International Symposium*, IEEE, 2013, pp. 1–6.
- [59] A. Saghiri and A. Bagheri, “Enhance Your Search Engine Functionality with Peer-to-Peer Systems,” in *2010 The 2nd International Conference on Computer and Automation Engineering (ICCAE)*, vol. 1, IEEE, 2010, pp. 583–586.
- [60] A. Saghiri and A. Bagheri, “An Adaptive Architecture for Personalized Search Engine in Ubiquitous Environment with Peer-to-Peer Systems,” in *2009 International Conference on Information and Multimedia Technology*, IEEE, 2009, pp. 107–111.

Talks and Workshops

- Why Chatbots Will Be Vital in the Future of Education?, Cengage, Spring 2024.
- Central Bank Digital Currencies Based on Blockchain and Graph Analyses, Stevens Institute of Technology, Fall 2022.
- Internet of Things, Sharif University, Spring 2021.

Teaching

- Computer and Information Technology, William Paterson University, Fall 2023 and Spring 2024.
- System Administration, William Paterson University, Spring 2024.
- Computer Networks II, William Paterson University, Fall 2023.
- Discrete Mathematics, William Paterson University, Fall 2023 and Spring 2024.
- Algorithms, University of Science and Culture, Fall 2012.
- Database Laboratory, Amirkabir University of Technology, Spring 2011.
- Software Engineering Laboratory, Azad University, Tehran (Shahre-Rey Branch), Spring/Fall 2014–2016.
- Software Engineering, Azad University, Tehran (Shahre-Rey Branch), Spring 2016.
- Software Engineering, Azad University, Tehran (North Branch), Spring 2016 and Spring 2017.
- Artificial Intelligence, Azad University, Tehran (North Branch), Fall 2017 and Spring 2018.
- Database, Azad University, Tehran (North Branch), Fall 2017 and Spring 2018.
- Theory of Automata, Azad University, Tehran (North Branch), Fall 2017.
- Computer Laboratory, Azad University, Tehran (Dentistry Branch), 2009–2012.
- Fundamentals of Computers and Programming, Amirkabir University of Technology, Spring 2018.
- Fundamentals of Internet of Things, Sadra University, Spring 2018.

Reviewer and Organizer for Scientific Journals and Conferences

Organizer

- Scientific Chair, 1st International Memorial Conference Dr. Hajar Afsar Lajevardi (DHAL 2016), Tehran, Iran.
- Scientific Chair, 2nd International Memorial Conference Dr. Hajar Afsar Lajevardi (DHAL 2017), Tehran, Iran.
- Director and Member of Executive Committee, Dr. Hajar Afsar Lajevardi Memorial Foundation, 2016–now.
- Scientific Committee, 4th International Conference on Knowledge-Based Engineering and Innovation (KBEI 2017), Tehran, Iran.

Editor

- Applied Sciences (Guest Editor).
- Mathematical Biosciences and Engineering (Guest Editor).
- International Journal of Advances in Applied Sciences.

Journal Reviewer

- IEEE Systems Journal; IEEE Access; IEEE Internet of Things; IEEE Transactions on Information Forensics and Security; IEEE Transactions on Computational Social Systems.
- Transactions on Emerging Telecommunications Technologies; Journal of Computational Science; Personal and Ubiquitous Computing; Wireless Personal Communications; International Journal of Communication Systems.
- Applied Sciences; The Journal of Supercomputing; Advanced Engineering Informatics; Peer-to-Peer Networking and Applications; Journal of High-Speed Networks.
- Microprocessors and Microsystems; Cogent Engineering; Artificial Intelligence Review; AppliedMath; Electronics; Entropy; Mathematics; Sensors; Sustainability.

Conference Reviewer

- 2012 IEEE Symposium on Wireless Technology & Applications.
- 22nd National CSI Computer Conference.
- 2013 IEEE Symposium on Computers & Informatics.
- 2012 IEEE Student Conference on Research and Development.
- 2017 International Conference on Telecommunication, Electronic and Computer Engineering.
- 2018 2nd International Conference on Research and Innovation in Computer Engineering and Computer Sciences.

Advanced Technical Skills

- Programming Languages: Python, C# [good]; C++, Java, C [basic].
- IDEs: MATLAB, NetBeans, PyCharm, Visual Studio .NET.
- Libraries and Platforms: Nethereum (smart contract and blockchain), TensorFlow.

Awards and Grants

- 2007: Ranked in the top 0.2% among 10,395 participants in the nationwide university entrance exam for higher education in computer engineering.
- 2010–2017: Full Scholarship, Ph.D. program at Amirkabir University of Technology.
- 2018: Best Paper at International Conference on Web Research (ICWR).

Projects

Blockchain-Based Budget Management System for E-Governments	2023
• A blockchain-based system for managing budgets in e-governments.	
Blockchain-Based Energy Token Management System	2022
• A blockchain-based system for managing energy tokens was developed.	
Flight Planning System Based on AI	2020
• Neural networks estimated flight timetables and a genetic algorithm generated optimized plans; implemented with object-oriented programming.	
Adaptive Drop-Out Algorithm for Neural Networks	2020
• Learning automaton theory was used to propose an adaptive drop-out algorithm for neural networks.	
Adaptive Decision Tree Based on Continuous-Action Learning Automaton	2020
• Learning automaton theory was used to propose an adaptive version of ID3.	
Design and Analysis of Staff Management System	2019
• Designed and analyzed a staff management system; UML diagrams and architecture were designated.	
IoT-Based Watering System	2018
• Programmed Arduino and sensors to manage watering in an apartment.	
Design and Implementation of a Web Crawler	2015
• Java-based crawler for gathering information from delicious.com.	
Peer-to-Peer Digital Library	2014
• Java-based peer-to-peer system for sharing PDF books.	
Java-Based Search Engine	2013
• Terrier engine was used to organize a customized search engine.	